

**Maryland Health Care Commission**  
**Primary Percutaneous Coronary Intervention (PCI) Programs**  
**in Hospitals without On-Site Cardiac Surgery**

**Quarterly and Annual Data Report**

**Source: Maryland STEMI (Primary PCI) Data Registry**  
**Reporting Period: *October 1 through December 30, 2006 and calendar year 2006***

**INTRODUCTION**

In January 2006, the Maryland Health Care Commission (MHCC) began the systematic collection of data on the delivery and outcomes of primary PCI services performed at Maryland hospitals without on-site cardiac surgical services under the Commission's primary PCI waiver program. Under the waiver program, hospitals without on-site cardiac surgery may provide PCI services to patients meeting certain eligibility criteria:

- Patients with ST-segment elevation myocardial infarction (or new LBBB or ST-depression V1-V2 compatible with true posterior infarction) who are thrombolytic-eligible or -ineligible;
- Patients with acute myocardial infarction and in cardiogenic shock that the treating physician(s) believe may experience a worse outcome if transferred to a tertiary institution because they are too unstable or because a temporal delay in transfer may be harmful; and
- Patients for whom the primary PCI system was not initially available, who received thrombolytic therapy that subsequently failed. These cases should constitute no more than 10 percent of all cases.

This interim registry is intended to facilitate ongoing quality improvement and provide information necessary to measure program compliance with certain regulatory requirements.

Hospitals without on-site cardiac surgery interested in providing primary PCI under the waiver program are required to submit applications to the MHCC. The Commission established a schedule that provides for the timely and systematic review of applications from hospitals in each of the four regions used in planning for cardiac surgery services. Waivers were granted to seven hospitals in the Metropolitan Baltimore Region (i.e., Anne Arundel Medical Center, Baltimore Washington Medical Center, Franklin Square Hospital Center, Howard County General Hospital, Johns Hopkins Bayview Medical Center, Mercy Medical Center, and St. Agnes Hospital) on May 18, 2006. On June 15, 2006, waivers were granted to four Metropolitan Washington Region hospitals: Doctors Community Hospital, Holy Cross Hospital, Shady Grove Adventist Hospital and Southern Maryland Hospital Center.

The following report presents data for the 11 Maryland hospitals without on-site cardiac surgery services that have received waivers to perform primary PCI. This report is for

the fourth quarter (October 1 to December 31) of calendar year 2006. Quarterly reporting provides additional perspective regarding progress in the delivery of services. Data are discussed in the context of the quantitative requirements and recommendations established by the Commission for a hospital to qualify for a waiver. The Commission evaluates the registry data on a quarterly and hospital-by-hospital basis. The fourth quarter and calendar year data follow the Discussion. Also provided are data for the previous three quarters that reflect the final corrected data in the 2006 registry database.

## **DISCUSSION**

During the fourth quarter of 2006, the 11 hospitals providing PCI services under the MHCC waiver program entered 341 patients (range: 2-48 per hospital) into the Commission's registry. Of the 304 patients undergoing cardiac catheterization (range: 2-47), 226 (74%) underwent an attempted PCI (range: 2-34). A PCI attempt occurs when a guidewire is placed in the coronary artery whether the guidewire crosses the intended lesion or not and whether a device is utilized or not.

Four (4) patients were reported as having "no documented STEMI" (ST-segment elevation myocardial infarction). In one case, the patient had left bundle branch block (LBBB) on the admission electrocardiogram (ECG), which does meet the criteria for primary PCI (new or presumably new LBBB). The three remaining patients without documented STEMI (NSTEMI) underwent PCI.

In calendar year 2006, in addition to the 11 waiver hospitals, the MHCC authorized Suburban Hospital to continue performing primary PCI without on-site cardiac surgery pending initiation of its Commission-approved cardiac surgery program. The hospital was required to submit data for all primary PCI patients treated prior to initiation of the cardiac surgery program on May 9, 2006. In 2006, the 12 hospitals had 1,169 registrants (including 19 registrants at Suburban Hospital). A total of 984 (84%) underwent cardiac catheterization; of those, 761 (77%) underwent an attempted PCI. All 19 patients at Suburban Hospital underwent cardiac catheterization; of those, 16 had a PCI attempt.

In 2006, 6 hospitals reported 27 registrants as having "no documented STEMI." In three cases, the patients had LBBB on the presenting (admission) ECG. In addition, one patient who was reported as having "no documented STEMI" actually did have a STEMI documented on the presenting ECG. Of the remaining 23 patients, 21 had cardiac catheterization at the reporting facility; of those, 17 had PCI.

The MHCC requires waiver hospitals in areas where rapid access to an institution performing at least 49 procedures annually is available to demonstrate that they treat 85-90 STEMI patients on an annual basis. This optimum number of patients is expected to yield the optimum number of PCI procedures annually, as specified in the waiver requirements. An institution performing at least 49 cases annually, or approximately one case per week, is more likely to have the logistics and staff available for timely reperfusion of acutely ill patients.

In 2006, all of the 11 waiver hospitals except Mercy Medical Center (22 STEMI registrants), Holy Cross Hospital (58 STEMI registrants), Doctors Community Hospital (61 STEMI registrants), and Johns Hopkins Bayview Medical Center (79 STEMI registrants) met the MHCC requirement of 85-90 STEMI patients. Additionally, because of equipment problems in the Cardiovascular Laboratory, Howard County General Hospital (79 STEMI registrants) did not perform any primary PCI procedures during the first quarter, although 13 STEMI patients were registered. These patients were transferred to other facilities for treatment. Howard County General Hospital resumed the primary PCI program on April 12, 2006.

Numerous scientific studies demonstrate that the more prompt the treatment of STEMI patients, the more likely they will be to survive the infarct.<sup>1</sup> Professional practice guidelines for cardiologists and cardiac interventionalists call for providing primary angioplasty to all STEMI patients within 90 minutes of presentation. The MHCC waiver program requires that 80% of appropriate patients should receive primary PCI services within 120 minutes or less of their arrival at the hospital. Door-to-balloon (DTB) time is typically recorded as the difference in minutes between the patient's arrival in the hospital emergency room and the time of first device use. The first device used is almost always a balloon-type device, but occasionally is a thrombectomy device. In the MHCC registry database, exceptions to this calculation method most commonly occur when the patient arrives with a *history* of chest discomfort but a normal or non-diagnostic initial (first) ECG. *If and only if* the first ECG is normal/non-diagnostic *and* is entered into the MHCC registry database for review and confirmation along with a second ECG showing STEMI, then the date and time of the second (diagnostic) ECG are used as the "door" or "clock start" time to calculate DTB time. This same algorithm is applied to patients already hospitalized: the "door" ECG is the first ECG recorded showing STEMI.

Achieving DTB times of  $\leq 120$  minutes requires careful planning, organization and teamwork, and hospitals continually strive for improvement relative to this performance measure.<sup>2</sup> During October, the Commission requested that hospitals that had not met certain performance criteria as evidenced by the year-to-date data submit action plans detailing initiatives that the hospitals have implemented or planned and expect to facilitate their ability to reliably and reproducibly attain the 80% DTB standard, as well as other performance targets. With the exception of Shady Grove Adventist Hospital, which met all criteria with regard to year-to-date data in the third quarter, all other hospitals participating in the waiver program submitted action plans that included strategies for improving performance. Some of the improved DTB time performances noted in the third or fourth quarter may reflect earlier implementation of initiatives described in the action plans.

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<sup>1</sup> SC Smith Jr, TE Feldman, JW Hirshfeld Jr, et al., ACC/AHA/SCAI 2005 Guideline Update for Percutaneous Coronary Intervention: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (ACC/AHA/SCAI Writing Committee to Update the 2001 Guidelines for Percutaneous Coronary Intervention), 2005, 52. Available at: <http://www.acc.org/clinical/guidelines/percutaneous/update/index.pdf>

<sup>2</sup> Bradley EH, J Herrin, Wang Y, et al., Strategies for reducing the door-to-balloon time in acute myocardial infarction. N Eng J Med 2006;355:2308-20.

During the fourth quarter of 2006, all of the 11 waiver hospitals except Johns Hopkins Bayview Medical Center (56%), Doctors Community Hospital (57%), Howard County General Hospital (75%), and Holy Cross Hospital (75%) met the 80% threshold. In 2006, the following hospitals did not meet this requirement: Doctors Community Hospital (42%), Howard County General Hospital (43%), Mercy Medical Center (46%), Holy Cross Hospital (49%), Johns Hopkins Bayview Medical Center (49%), St. Agnes Hospital (70%), Southern Maryland Hospital Center (75%), and Baltimore Washington Medical Center (76%) did not meet this requirement.

The MHCC requires waiver hospitals in areas where access to a high-volume program is readily available to perform an optimum number of primary PCI procedures annually. In 2006, the following hospitals met this requirement by performing at least 49 PCI procedures: Southern Maryland Hospital Center (106), Franklin Square Hospital Center (101), Shady Grove Adventist Hospital (92), Anne Arundel Medical Center (89), Baltimore Washington Medical Center (82), and St. Agnes Hospital (81 including non-STEMI patients). As noted above, because of equipment problems in the Cardiovascular Laboratory, Howard County General Hospital (42 PCI procedures) did not perform any procedures during the first quarter.

Table 1. Numbers of registrants, STEMI patients, NSTEMI patients, catheterized (cathed) patients, and patients for whom PCI was attempted at Maryland hospitals performing primary PCI under waivers from the Maryland Health Care Commission, October 1 – December 31, 2006 and calendar year 2006.

	Registrant <sup>1</sup>	STEMI <sup>2</sup>	NSTEMI <sup>3</sup>	Cathed <sup>4</sup>	PCI Attempt <sup>5</sup>
<b>4th Quarter 2006 (October 1 - December 31)</b>					
Anne Arundel Medical Center	50	50	0	42	34
Baltimore Washington Medical Center	31	31	0	29	23
Doctors Community Hospital	21	20	1	20	8
Franklin Square Hospital Center	47	47	0	47	34
Holy Cross Hospital	19	19	0	16	9
Howard County General Hospital	31	30	1	25	16
Johns Hopkins Bayview Medical Center	21	20	1	14	10
Mercy Medical Center	2	2	0	2	2
St. Agnes Hospital	34	32	1	29	24
Shady Grove Adventist Hospital	37	37	0	37	34
Southern Maryland Hospital Center	48	48	0	43	32
<b>CY 2006 (January 1 - December 31)</b>					
Anne Arundel Medical Center	136	132	4	111	93
Baltimore Washington Medical Center	124	123	1	105	83
Doctors Community Hospital	68	61	7	62	35
Franklin Square Hospital Center	165	165	0	136	111
Holy Cross Hospital	58	58	0	53	35
Howard County General Hospital <sup>6</sup>	80	79	1	60	42
Johns Hopkins Bayview Medical Center	82	79	3	51	42
Mercy Medical Center	22	22	0	19	13
St. Agnes Hospital	126	116	10	105	83
Shady Grove Adventist Hospital	113	113	0	105	98
Southern Maryland Hospital Center	176	175	1	158	110
Suburban Hospital <sup>7</sup> (January 1 - May 8)	19	19	0	19	16

<sup>1</sup> Registrant – patient entered in MHCC Registry.

<sup>2</sup> STEMI – registrant presenting with ST-segment elevation myocardial infarction.

<sup>3</sup> NSTEMI – registrant without documented STEMI.

<sup>4</sup> Cathed – registrant undergoing diagnostic cardiac catheterization.

<sup>5</sup> PCI attempt – any attempt to advance a guidewire across a coronary lesion.

<sup>6</sup> Howard County General Hospital identified 13 STEMI patients during the first quarter, but performed no primary PCI procedures; the primary PCI program, which was suspended on October 3, 2005, resumed on April 12, 2006.

<sup>7</sup> Suburban Hospital was required to submit data for all primary PCI patients treated prior to initiation of the cardiac surgery program on May 9, 2006.

Table 2. Median door-to-balloon<sup>1</sup> (DTB) times, and number and percentage of patients by DTB  $\leq$  120 minutes or  $>$  120 minutes at Maryland hospitals performing primary PCI under waivers from the Maryland Health Care Commission, October 1 – December 31, 2006 and calendar year 2006. MHCC waiver requirements specify that 80% of appropriate patients should have a DTB time of  $\leq$  120 minutes.

	Median DTB (minutes)	$\leq$ 120 Minutes (N)	$\leq$ 120 Minutes (%)	$>$ 120 Minutes (N)	$>$ 120 Minutes (%)
<b>4th Quarter 2006 (October 1 - December 31)</b>					
Anne Arundel Medical Center	81	32	94	2	6
Baltimore Washington Medical Center	89	23	100	0	0
Doctors Community Hospital <sup>2</sup>	111	4	57	3	43
Franklin Square Hospital Center	90	29	88	4	12
Holy Cross Hospital <sup>3</sup>	90	7	78	2	22
Howard County General Hospital <sup>4</sup>	112	12	75	4	25
Johns Hopkins Bayview Medical Center	107	5	56	4	44
Mercy Medical Center	100	2	100	0	0
St. Agnes Hospital <sup>5</sup>	94	20	83	4	17
Shady Grove Adventist Hospital	107	24	83	5	17
Southern Maryland Hospital Center	89	30	94	2	6
<b>CY 2006 (January 1 - December 31)</b>					
Anne Arundel Medical Center <sup>6</sup>	86	77	87	12	13
Baltimore Washington Medical Center	99	62	76	20	24
Doctors Community Hospital <sup>2</sup>	125	14	42	19	58
Franklin Square Hospital Center	93	82	81	19	19
Holy Cross Hospital <sup>3</sup>	123	17	49	18	51
Howard County General Hospital <sup>4</sup>	128	18	43	24	57
Johns Hopkins Bayview Medical Center <sup>7</sup>	122	19	49	20	51
Mercy Medical Center	135	6	46	7	54
St. Agnes Hospital <sup>5</sup>	102	53	70	23	30
Shady Grove Adventist Hospital <sup>8</sup>	97	80	87	12	13
Southern Maryland Hospital Center <sup>9</sup>	99	80	75	26	25
Suburban Hospital <sup>10</sup> (January 1 - May 8)	117	8	50	8	50

<sup>1</sup> Door-to-balloon time – elapsed time from arrival at hospital, if STEMI criteria met, to time of first device use.

<sup>2</sup> Doctors Community Hospital (DCH) performed PCI on 1 registrant without documented ST-segment elevation myocardial infarction (NSTEMI) during this quarter, and 3 during the third quarter. During the fourth quarter, the patient had a DTB time of 109 minutes. During the third quarter, the patients had DTB times of 210, 315, and 270 minutes. DCH believes that there are discrepancies in the overall DTB time data. DCH reported separately that the hospital's data showed that the DTB time was  $<$  120 minutes for 1 patient during the first quarter of 2006; the hospital omitted the time of "first balloon inflation" when entering the data. The hospital also reported that, during the fourth quarter, 8 PCI procedures were performed with 5 patients having a DTB time  $<$  120 minutes.

<sup>3</sup> Holy Cross Hospital (HCH) stated that there are discrepancies in the registry data

and data reported separately by the hospital. HCH believes the DTB time was < 120 minutes for 6 out of 11 cases during the third quarter, and 9 out of 9 cases during the fourth quarter. HCH also stated that the hospital found a 12-minute discrepancy between clocks in the emergency center and the cardiac catheterization laboratory during the first quarter.

- <sup>4</sup> Howard County General Hospital (HCGH) performed PCI on 1 NSTEMI patient during this quarter. The patient had a DTB time of 137 minutes. HCGH performed no PCI procedures during the first quarter.
- <sup>5</sup> St. Agnes Hospital (SAH) performed PCI on 1 NSTEMI patient during the fourth quarter; 5 during the first quarter; 1 during the second quarter; and 2 during the third quarter. During the first quarter, three NSTEMI patients had DTB times of 202, 279, and 313 minutes; during the third quarter, one patient had a DTB time of 169 minutes. Excluded are five patients who had incalculable door-to-balloon times. Of those patients, the clock start time could not be determined for four patients because the patients were entered into the registry during a diagnostic catheterization. For the remaining patient, no clock start time could be determined from the case report forms or medical record documentation in the database.
- <sup>6</sup> Anne Arundel Medical Center performed PCI on 1 NSTEMI patient during the first quarter. The patient had a DTB time of 112 minutes.
- <sup>7</sup> One NSTEMI patient underwent a failed PCI attempt at Johns Hopkins Bayview Medical Center during the third quarter.
- <sup>8</sup> During the fourth quarter, Shady Grove Adventist Hospital performed PCI for two patients who were transferred from the Shady Grove Adventist Emergency Center, a freestanding medical facility in Germantown, Maryland. The center, which opened in August 2006, is a part of Shady Grove Adventist Hospital administratively and operationally. The transfer facility-to-balloon time median was 199 minutes.
- <sup>9</sup> Southern Maryland Hospital Center performed PCI on 1 NSTEMI patient during the second quarter. The patient had a DTB time of 256 minutes.
- <sup>10</sup> Suburban Hospital was required to submit data for all primary PCI patients treated prior to initiation of the cardiac surgery program on May 9, 2006.

Table 3. Number of patients who underwent PCI at Maryland hospitals performing primary PCI under waivers from the Maryland Health Care Commission, October 1 – December 31, 2006 and calendar year 2006. MHCC waiver requirements specify that institutions should perform an optimum of 49 primary PCI procedures annually except in areas of the state where access to a high-volume program is not readily available.

<b>4th Quarter 2006 (October 1 - December 31)</b>	<b>PCI Cases<sup>1</sup></b>
Anne Arundel Medical Center	34
Baltimore Washington Medical Center	23
Doctors Community Hospital <sup>2</sup>	7
Franklin Square Hospital Center	33
Holy Cross Hospital	9
Howard County General Hospital	16
Johns Hopkins Bayview Medical Center	9
Mercy Medical Center	2
St. Agnes Hospital <sup>3</sup>	24
Shady Grove Adventist Hospital	29
Southern Maryland Hospital Center	32
 <b>CY 2006 (January 1 - December 31)</b>	
Anne Arundel Medical Center	89
Baltimore Washington Medical Center	82
Doctors Community Hospital <sup>2</sup>	33
Franklin Square Hospital Center	101
Holy Cross Hospital	35
Howard County General Hospital <sup>4</sup>	42
Johns Hopkins Bayview Medical Center	39
Mercy Medical Center	13
St. Agnes Hospital <sup>3</sup>	76
Shady Grove Adventist Hospital	92
Southern Maryland Hospital Center	106
Suburban Hospital <sup>5</sup> (January 1 - May 8)	16

<sup>1</sup> PCI case – registrant who underwent percutaneous coronary intervention. The first device used is almost always a balloon-type device, but occasionally is a thrombectomy device. The overwhelming majority of primary PCI procedures involved a single infarct-related artery (92%), while 7% of patients underwent double-vessel PCI.

<sup>2</sup> Doctors Community Hospital (DCH) believes that there are discrepancies in the data. DCH reported separately that the hospital's data showed 4, not 3, cases during the first quarter, and 8, not 7, cases during the fourth quarter.

<sup>3</sup> Additionally, St. Agnes Hospital performed PCI on one patient who had an incalculable DTB time during the fourth quarter; two during the first quarter; one during the second quarter; and one during the third quarter.

<sup>4</sup> Howard County General Hospital performed no PCI procedures during the first quarter because of equipment problems in the Cardiovascular Laboratory.

<sup>5</sup> Suburban Hospital was required to submit data for all primary PCI patients treated prior to initiation of the cardiac surgery program on May 9, 2006.



Table 1a. Numbers of registrants, STEMI patients, NSTEMI patients, catheterized (cathed) patients, and patients for whom PCI was attempted at Maryland hospitals performing primary PCI under waivers from the Maryland Health Care Commission, January 1 – March 31, 2006.

<b>1st Quarter 2006 (January 1 - March 31)</b>	Registrant <sup>1</sup>	STEMI <sup>2</sup>	NSTEMI <sup>3</sup>	Cathed <sup>4</sup>	PCI Attempt <sup>5</sup>
Anne Arundel Medical Center	33	32	1	29	25
Baltimore Washington Medical Center	33	33	0	25	22
Doctors Community Hospital	9	8	1	9	4
Franklin Square Hospital Center	42	42	0	25	22
Holy Cross Hospital	14	14	0	13	10
Howard County General Hospital <sup>6</sup>	13	13	0	0	0
Johns Hopkins Bayview Medical Center	25	25	0	14	12
Mercy Medical Center	4	4	0	1	1
St. Agnes Hospital	28	24	5	25	21
Shady Grove Adventist Hospital	27	27	0	27	27
Southern Maryland Hospital Center	46	46	0	43	29
Suburban Hospital	12	12	0	12	10

<sup>1</sup> Registrant – patient entered in MHCC Registry.

<sup>2</sup> STEMI – registrant presenting with ST-segment elevation myocardial infarction.

<sup>3</sup> NSTEMI – registrant without documented STEMI.

<sup>4</sup> Cathed – registrant undergoing diagnostic cardiac catheterization.

<sup>5</sup> PCI attempt – any attempt to advance a guidewire across a coronary lesion.

<sup>6</sup> Howard County General Hospital attempted no primary PCI procedures during the first quarter because of equipment problems in the Cardiovascular Laboratory.

Table 2a. Median door-to-balloon<sup>1</sup> (DTB) times, and number and percentage of patients by DTB  $\leq$  120 minutes or  $>$  120 minutes at Maryland hospitals performing primary PCI under waivers from the Maryland Health Care Commission, January 1 – March 31, 2006. MHCC waiver requirements specify that 80% of appropriate patients should have a DTB time of  $\leq$  120 minutes.

	Median DTB (minutes)	$\leq$ 120 Minutes (N)	$\leq$ 120 Minutes (%)	$>$ 120 Minutes (N)	$>$ 120 Minutes (%)
<b>1st Quarter 2006 (January 1 - March 31)</b>					
Anne Arundel Medical Center <sup>2</sup>	104.5	18	75	6	25
Baltimore Washington Medical Center	102.5	13	59	9	41
Doctors Community Hospital <sup>3</sup>	146	0	0	3	100
Franklin Square Hospital Center	105	13	65	7	35
Holy Cross Hospital <sup>4</sup>	132.5	2	20	8	80
Howard County General Hospital <sup>5</sup>		0		0	
Johns Hopkins Bayview Medical Center	141	3	25	9	75
Mercy Medical Center	135	0	0	1	100
St. Agnes Hospital <sup>6</sup>	119	9	53	8	47
Shady Grove Adventist Hospital	87	24	89	3	11
Southern Maryland Hospital Center	119	14	52	13	48
Suburban Hospital	117	5	50	5	50

<sup>1</sup> Door-to-balloon time – elapsed time from arrival at hospital, if STEMI criteria met, to time of first device use.

<sup>2</sup> Anne Arundel Medical Center performed PCI on 1 registrant without documented ST-segment elevation myocardial infarction (NSTEMI) during the first quarter. The patient had a DTB time of 112 minutes.

<sup>3</sup> Doctors Community Hospital (DCH) believes that there are discrepancies in the data. DCH reported separately that the hospital's data showed that the DTB time was  $<$  120 minutes for 1 patient during the first quarter; the hospital omitted the time of "first balloon inflation" when entering the data.

<sup>4</sup> Holy Cross Hospital stated that the hospital found a 12-minute discrepancy between clocks in the emergency center and the cardiac catheterization laboratory.

<sup>5</sup> Howard County General Hospital performed no PCI procedures during the first quarter because of equipment problems in the Cardiovascular Laboratory.

<sup>6</sup> St. Agnes Hospital performed PCI on 5 registrants without documented ST-segment elevation myocardial infarction during the first quarter. The DTB times for 3 of the patients were 202, 279, and 313 minutes. Excluded are two patients who had incalculable DTB times.

Table 3a. Number of patients who underwent PCI at Maryland hospitals performing primary PCI under waivers from the Maryland Health Care Commission, January 1 – March 31, 2006. MHCC waiver requirements specify that institutions should perform an optimum of 49 primary PCI procedures annually except in areas of the state where access to a high-volume program is not readily available.

<b>1st Quarter 2006 (January 1 - March 31)</b>	<b>PCI Cases<sup>1</sup></b>
Anne Arundel Medical Center	24
Baltimore Washington Medical Center	22
Doctors Community Hospital <sup>2</sup>	3
Franklin Square Hospital Center	20
Holy Cross Hospital	10
Howard County General Hospital <sup>3</sup>	0
Johns Hopkins Bayview Medical Center	12
Mercy Medical Center	1
St. Agnes Hospital <sup>4</sup>	17
Shady Grove Adventist Hospital	27
Southern Maryland Hospital Center	27
Suburban Hospital	10

<sup>1</sup> PCI case – registrant who underwent percutaneous coronary intervention. The first device used is almost always a balloon-type device, but occasionally is a thrombectomy device. The overwhelming majority of primary PCI procedures involved a single infarct-related artery (92%), while 7% of patients underwent double-vessel PCI.

<sup>2</sup> Doctors Community Hospital referred to discrepancies in the data and reported separately that the hospital's data showed 4, not 3, cases during the first quarter.

<sup>3</sup> Howard County General Hospital performed no PCI procedures during the first quarter because of equipment problems in the Cardiovascular Laboratory.

<sup>4</sup> Additionally, St. Agnes Hospital performed PCI on two patients who had incalculable DTB times.

Table 1b. Numbers of registrants, STEMI patients, NSTEMI patients, catheterized (cathed) patients, and patients for whom PCI was attempted at Maryland hospitals performing primary PCI under waivers from the Maryland Health Care Commission, April 1 – June 30, 2006.

<b>2nd Quarter 2006 (April 1 - June 30)</b>	Registrant <sup>1</sup>	STEMI <sup>2</sup>	NSTEMI <sup>3</sup>	Cathed <sup>4</sup>	PCI Attempt <sup>5</sup>
Anne Arundel Medical Center	27	25	2	22	18
Baltimore Washington Medical Center	31	31	0	25	19
Doctors Community Hospital	19	17	2	15	12
Franklin Square Hospital Center	38	38	0	30	24
Holy Cross Hospital	7	7	0	6	5
Howard County General Hospital <sup>6</sup>	20	20	0	19	14
Johns Hopkins Bayview Medical Center	18	18	0	12	11
Mercy Medical Center	11	11	0	11	7
St. Agnes Hospital	29	27	2	21	15
Shady Grove Adventist Hospital	28	28	0	22	20
Southern Maryland Hospital Center	30	29	1	27	22
Suburban Hospital <sup>7</sup> (April 1 - May 8)	7	7	0	7	6

<sup>1</sup> Registrant – patient entered in MHCC Registry.

<sup>2</sup> STEMI – registrant presenting with ST-segment elevation myocardial infarction.

<sup>3</sup> NSTEMI – registrant without documented STEMI.

<sup>4</sup> Cathed – registrant undergoing diagnostic cardiac catheterization.

<sup>5</sup> PCI attempt – any attempt to advance a guidewire across a coronary lesion.

<sup>6</sup> Howard County General Hospital resumed the primary PCI program, which had been suspended on October 3, 2005, on April 12, 2006.

<sup>7</sup> Suburban Hospital was required to submit data for all primary PCI patients treated prior to initiation of the cardiac surgery program on May 9, 2006.

Table 2b. Median door-to-balloon<sup>1</sup> (DTB) times, and number and percentage of patients by DTB  $\leq$  120 minutes or  $>$  120 minutes at Maryland hospitals performing primary PCI under waivers from the Maryland Health Care Commission, April 1 – June 30, 2006. MHCC waiver requirements specify that 80% of appropriate patients should have a DTB time of  $\leq$  120 minutes.

	Median DTB (minutes)	$\leq$ 120 Minutes (N)	$\leq$ 120 Minutes (%)	$>$ 120 Minutes (N)	$>$ 120 Minutes (%)
<b>2nd Quarter 2006 (April 1 - June 30)</b>					
Anne Arundel Medical Center	94	14	82	3	18
Baltimore Washington Medical Center	113	11	61	7	39
Doctors Community Hospital	118.5	6	50	6	50
Franklin Square Hospital Center	97	17	81	4	19
Holy Cross Hospital	113	3	60	2	40
Howard County General Hospital <sup>2</sup>	139	6	43	8	57
Johns Hopkins Bayview Medical Center	128	5	45	6	55
Mercy Medical Center	153	3	43	4	57
St. Agnes Hospital <sup>3</sup>	104	9	60	6	40
Shady Grove Adventist Hospital	91	19	100	0	0
Southern Maryland Hospital Center <sup>4</sup>	114	15	71	6	29
Suburban Hospital <sup>5</sup> (April 1 - May 8)	103	3	50	3	50

<sup>1</sup> Door-to-balloon time – elapsed time from arrival at hospital, if STEMI criteria met, to time of first device use.

<sup>2</sup> Howard County General Hospital resumed the primary PCI program, which had been suspended on October 3, 2005, on April 12, 2006.

<sup>3</sup> St. Agnes Hospital performed PCI on 1 registrant without documented ST-segment elevation myocardial infarction (NSTEMI) during the second quarter. DTB time was incalculable, and this case is excluded from the DTB data.

<sup>4</sup> Southern Maryland Hospital Center performed PCI on 1 NSTEMI patient during the second quarter. The patient had a DTB time of 256 minutes.

<sup>5</sup> Suburban Hospital was required to submit data for all primary PCI patients treated prior to initiation of the cardiac surgery program on May 9, 2006.

Table 3b. Number of patients who underwent PCI at Maryland hospitals performing primary PCI under waivers from the Maryland Health Care Commission, April 1 – June 30, 2006. MHCC waiver requirements specify that institutions should perform an optimum of 49 primary PCI procedures annually except in areas of the state where access to a high-volume program is not readily available.

<b>2nd Quarter 2006 (April 1 - June 30)</b>	<b>PCI Cases<sup>1</sup></b>
Anne Arundel Medical Center	17
Baltimore Washington Medical Center	18
Doctors Community Hospital	12
Franklin Square Hospital Center	21
Holy Cross Hospital	5
Howard County General Hospital <sup>2</sup>	14
Johns Hopkins Bayview Medical Center	11
Mercy Medical Center	7
St. Agnes Hospital <sup>3</sup>	15
Shady Grove Adventist Hospital	19
Southern Maryland Hospital Center	21
Suburban Hospital <sup>4</sup> (April 1 - May 8)	6

<sup>1</sup> PCI case – registrant who underwent percutaneous coronary intervention. The first device used is almost always a balloon-type device, but occasionally is a thrombectomy device. The overwhelming majority of primary PCI procedures involved a single infarct-related artery (92%), while 7% of patients underwent double-vessel PCI.

<sup>2</sup> Howard County General Hospital resumed the primary PCI program, which had been suspended on October 3, 2005, on April 12, 2006.

<sup>3</sup> Additionally, St. Agnes Hospital performed PCI on one patient who had an incalculable DTB time.

<sup>4</sup> Suburban Hospital was required to submit data for all primary PCI patients treated prior to initiation of the cardiac surgery program on May 9, 2006.

Table 1c. Numbers of registrants, STEMI patients, NSTEMI patients, catheterized (cathed) patients, and patients for whom PCI was attempted at Maryland hospitals performing primary PCI under waivers from the Maryland Health Care Commission, July 1 – September 30, 2006.

<b>3rd Quarter 2006 (July 1 - September 30)</b>	Registrant <sup>1</sup>	STEMI <sup>2</sup>	NSTEMI <sup>3</sup>	Cathed <sup>4</sup>	PCI Attempt <sup>5</sup>
Anne Arundel Medical Center	26	25	1	18	16
Baltimore Washington Medical Center	29	28	1	26	19
Doctors Community Hospital	19	16	3	18	11
Franklin Square Hospital Center	38	38	0	34	31
Holy Cross Hospital	18	18	0	18	11
Howard County General Hospital	16	16	0	16	12
Johns Hopkins Bayview Medical Center	18	16	2	11	9
Mercy Medical Center	5	5	0	5	3
St. Agnes Hospital	35	33	2	30	23
Shady Grove Adventist Hospital	21	21	0	19	17
Southern Maryland Hospital Center	52	52	0	45	27

<sup>1</sup> Registrant – patient entered in MHCC Registry.

<sup>2</sup> STEMI – registrant presenting with ST-segment elevation myocardial infarction.

<sup>3</sup> NSTEMI – registrant without documented STEMI.

<sup>4</sup> Cathed – registrant undergoing diagnostic cardiac catheterization.

<sup>5</sup> PCI attempt – any attempt to advance a guidewire across a coronary lesion.

Table 2c. Median door-to-balloon<sup>1</sup> (DTB) times, and number and percentage of patients by DTB  $\leq$  120 minutes or  $>$  120 minutes at Maryland hospitals performing primary PCI under waivers from the Maryland Health Care Commission, July 1 – September 30, 2006. MHCC waiver requirements specify that 80% of appropriate patients should have a DTB time of  $\leq$  120 minutes.

<b>3rd Quarter 2006 (July 1 - September 30)</b>	Median DTB (minutes)	$\leq$ 120 Minutes (N)	$\leq$ 120 Minutes (%)	$>$ 120 Minutes (N)	$>$ 120 Minutes (%)
Anne Arundel Medical Center	74.5	13	93	1	7
Baltimore Washington Medical Center	107	15	79	4	21
Doctors Community Hospital <sup>2</sup>	128	4	36	7	64
Franklin Square Hospital Center	97	23	85	4	15
Holy Cross Hospital <sup>3</sup>	123	5	45	6	55
Howard County General Hospital	148.5	0	0	12	100
Johns Hopkins Bayview Medical Center <sup>4</sup>	94	6	86	1	14
Mercy Medical Center	152	1	33	2	67
St. Agnes Hospital <sup>5</sup>	93	15	75	5	25
Shady Grove Adventist Hospital	104	13	76	4	24
Southern Maryland Hospital Center	82	21	81	5	19

<sup>1</sup> Door-to-balloon time – elapsed time from arrival at hospital, if STEMI criteria met, to time of first device use.

<sup>2</sup> Doctors Community Hospital performed PCI on 3 registrants without documented ST-segment elevation myocardial infarction (NSTEMI) during the third quarter. The patients had DTB times of 210, 315, and 270 minutes.

<sup>3</sup> Holy Cross Hospital (HCH) stated that there are discrepancies in the registry data and data reported separately by the hospital. HCH believes the DTB time was  $<$  120 minutes for 6 out of 11 cases during the third quarter.

<sup>4</sup> One NSTEMI patient underwent a failed PCI attempt at Johns Hopkins Bayview Medical Center during the third quarter.

<sup>5</sup> St. Agnes Hospital (SAH) performed PCI on 2 NSTEMI patients during the third quarter. One patient had a DTB time of 169 minutes; one patient had an incalculable DTB time and is excluded from the DTB data.



Table 3c. Number of patients who underwent PCI at Maryland hospitals performing primary PCI under waivers from the Maryland Health Care Commission, July 1 – September 30, 2006. MHCC waiver requirements specify that institutions should perform an optimum of 49 primary PCI procedures annually except in areas of the state where access to a high-volume program is not readily available.

<b>3rd Quarter 2006 (July 1 - September 30)</b>	<b>PCI Cases<sup>1</sup></b>
Anne Arundel Medical Center	14
Baltimore Washington Medical Center	19
Doctors Community Hospital	11
Franklin Square Hospital Center	27
Holy Cross Hospital	11
Howard County General Hospital	12
Johns Hopkins Bayview Medical Center	7
Mercy Medical Center	3
St. Agnes Hospital <sup>2</sup>	20
Shady Grove Adventist Hospital	17
Southern Maryland Hospital Center	26

<sup>1</sup> PCI case – registrant who underwent percutaneous coronary intervention. The first device used is almost always a balloon-type device, but occasionally is a thrombectomy device. The overwhelming majority of primary PCI procedures involved a single infarct-related artery (92%), while 7% of patients underwent double-vessel PCI.

<sup>2</sup> Additionally, St. Agnes Hospital performed PCI on one patient who had an incalculable DTB time.